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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/782,229 | 02/19/2004 | Philip A. Bernstein | MSFT-2911/115152.1 | 5212 |
| 41505 7590 04/19/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891 | | | EXAMINER FLEURANTIN, JEAN B | |
| | | | ART UNIT 2162 | PAPER NUMBER |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/782,229

Applicant(s)

BERNSTEIN ET AL.

Examiner

JEAN B. FLEURANTIN

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 76-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 76-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/26/07 has been entered.

This following is the status of claims:

Claims 1-66 previously canceled in the preliminary amendment (dated 02/19/04).

Claims 76-93 previously added.

Claims 76-93 remain pending for examination.

The terminal disclaimer filed on 4/10/07 has been entered and fully considered (approved).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 79-81 and 88-90 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As set forth in MPEP 2106:

As per independent claim 79

The independent claim 79 is directed to a computer readable medium having stored thereon computer-executable instructions, in which associating the structure context description with each object in the set of objects. The claimed steps are not being performed by any form of computer hardware component. Therefore, the mechanism for invoking an operation to cause the data storage system to retrieve another related object based on a relationship between the current object and the related object as the purpose of the invention. The claimed, "medium" fail to fall with one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

As per independent claim 88

The independent claim 88 is directed to a computer readable medium having stored thereon computer-executable instructions, in which associating the structure context description with each object in the set of objects. The claimed steps are not being performed by any form of computer hardware component. Therefore, the mechanism for invoking an operation to cause the data storage system to retrieve another related object based on a relationship between the current object and the related object as the purpose of the invention. The claimed, "medium" fail to fall with one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were

unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

And, all dependent claims are rejected under the same rational.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 76-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,765,159 issued to Srinivasan ("Srinivasan") in view of U.S. Patent No. 5,317,727 issued to Tsuchida et al., ("Tsuchida").

As per claim 76, Srinivasan discloses "a method for prefetching data for a set of objects, each object in the set comprising a plurality of attributes" (i.e., retrieving from dbms all attributes for the object; see col. 6, lines 30-32) comprising:

"prior to receiving a query" (see col. 8, lines 29-30), "creating a structure context description that identifies each object in the set of objects" (In light the specification at paragraph [0017], the purposed of creating a structure context is for associating that structure context description with every object in the structure. The method of creating a new path whose attribute (object) value matches the current path is disclosed by Srinivasan col. 10, lines 40-56);

"associating the structure context description with each object in the set of objects" (i.e., set of columns mapping to the base attributes (objects); see col. 5, lines 10-12); and

"receiving from an application the query that requests data corresponding to a first attribute of a first object in the set of objects" (i.e., receiving the original object query; see col. 8, lines 29-31); and

"in response to receiving the query" (i.e., responding to an object query; see col. 7, lines 36-37);

"retrieving data corresponding to the first attribute of the first object" (i.e., query retrieving only base attributes object; see col. 6, lines 29-32);

"returning the data corresponding to the first attribute of the first object to the application" (i.e., retrieving the data from relational database as a result of executing the object query; see col. 6, lines 32-35);

"using the structure context description to identify data corresponding to the first attribute of other objects in the set of objects" (i.e., using schema mapping information; see col. 10, lines 49-56);

"retrieving the data corresponding to the first attribute of the other objects in the set of objects" (see col. 11, lines 34-40 and Fig. 8).

Srinivasan fails to explicitly disclose the structure context description reduces time required to process the query after the query is received; and placing in cache the data corresponding to the first attribute of the other objects in the set of objects for future use. However, Tsuchida discloses the structure context description reduces time required to process the query after the query is received (see Tsuchida col. 3, lines 32-39); and placing in cache the data corresponding to the first attribute of the other objects in the set of objects for future use (see Tsuchida col. 5, lines 27-34 and col. 6, lines 2-5). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Srinivasan by reducing time required to process the query after the query is received; and placing in cache the data corresponding to the first attribute of the other objects in the set of objects for future use as disclosed by Tsuchida (see Tsuchida col. 6, lines 5-20). Such a modification would allow the method of Srinivasan to provide a database processing method, where useless prefetching operation is omitted, and the necessary data is surely prefetched so as to reduce the input/output processing time, so that the performance of the overall system can be improved (see Tsuchida col. 3, lines 25-31), therefore, improving the accuracy and the reliability of the prefetching and caching persistent objects.

As per claim 77, in addition to claim 76, Srinivasan further discloses "memory of a client application program, memory allocated to a data storage system" (i.e., computer program, residing in a

memory; see col. 3, lines 46-50), and "a table of a relational database" (i.e., relational table; see col. 5, lines 10-16).

As per claim 78, in addition to claim 76, Srinivasan further discloses "retrieving by an object repository the data corresponding to the first attribute of the other objects in the set of objects" (i.e., retrieving attributes objects; see col. 6, lines 58-60).

As per claim 79, the limitations of claim 79 are similar to claim 76; therefore, the limitations of claim 79 are rejected in the analysis of claim 76, and this claim is rejected on that basis.

As per claims 80 and 81, the limitations of claims 80 and 81 are similar to claims 77 and 78, therefore, the limitations of claim 80 and 81 are rejected in the analysis of claims 77 and 78, and these claims are rejected on that basis.

As per claim 82, in addition to claim 76, Srinivasan further discloses "a processor operative to execute computer executable instructions: and memory having stored therein computer executable instruction" (i.e., computer system includes one or more processors, a main memory and computer programs which residing in the main memory executed by the processors in the computer system; see col. 3, lines 35-49 and Fig. 2).

As per claims 83 and 84, the limitations of claims 83 and 84 are similar to claims 77 and 78, therefore, the limitations of claim 83 and 84 are rejected in the analysis of claims 77 and 78, and these claims are rejected on that basis.

As per claim 85, the limitations of claim 85 are similar to claim 76, therefore, the limitations of claim 85 are rejected in the analysis of claim 76, and this claim is rejected on that basis.

As per claim 86, in addition to claim 76, Srinivasan further discloses "memory of a client application program, memory allocated to a data storage system" (i.e., computer program, residing in a memory; see col. 3, lines 46-50), and "a table of a relational database" (i.e., relational table; see col. 5, lines 10-16).

As per claim 87, in addition to claim 76, Srinivasan further discloses "retrieving by an object repository the data corresponding to the first attribute of the other objects in the set of objects" (i.e., retrieving attributes objects; see col. 6, lines 58-60).

As per claim 88, the limitations of claim 88 are similar to claim 79, therefore, the limitations of claim 88 are rejected in the analysis of claim 79, and this claim is rejected on that basis.

As per claim 89, in addition to claim 88, Srinivasan further discloses "memory of a client application program, memory allocated to a data storage system" (i.e., computer program, residing in a memory; see col. 3, lines 46-50), and "a table of a relational database" (i.e., relational table; see col. 5, lines 10-16).

As per claim 90, in addition to claim 88, Srinivasan further discloses "retrieving by an object repository the data corresponding to the first attribute of the other objects in the set of objects" (i.e., retrieving attributes objects; see col. 6, lines 58-60).

As per claim 91, in addition to claim 76, Srinivasan further discloses "a processor operative to execute computer executable instructions; and memory having stored therein computer executable instruction" (i.e., computer system includes one or more processors, a main memory and computer programs which residing in the main memory executed by the processors in the computer system; see col. 3, lines 35-49 and Fig. 2).

As per claims 92 and 93, the limitations of claims 92 and 93 are similar to claims 90 and 91, therefore, the limitations of claim 92 and 93 are rejected in the analysis of claims 90 and 91, and these claims are rejected on that basis.

Response to Applicant' Remarks/Arguments

Applicant's arguments with respect to claims 76-93 have been fully considered but they are not persuasive. Because, the combination of Srinivasan and Tsuchida discloses the claimed limitations, also, independent claims 79 and 88 are rejected under 35 U.S.C. 101. Therefore, the amendment does not place the application in condition for allowance.

Claims as amended overcome the objections. Thus, the objections have been withdrawn.

The independent claims as amended, overcome the nonstatutory double patenting rejection(s). Thus, the rejection(s) has/have been withdrawn.

Furthermore, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Srinivasan discloses "a method for prefetching data for a set of objects, each object in the set comprising a plurality of attributes" (i.e., retrieving from dbms all attributes for the object; see col. 6, lines 30-32) "prior to receiving a query" (see col. 8, lines 29-30), "creating a structure context description that identifies each object in the set of objects" (In light the specification at paragraph [0017], the purposed of creating a structure context is for associating that structure context description with every object in the structure. The method of creating a new path whose attribute (object) value matches the current path is disclosed by Srinivasan col. 10, lines 40-56).

CONTACT INFORMATION

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is 571 – 272-4035. The examiner can normally be reached on 7:05 to 4:35.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571 – 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jean Bolte Fleurantin

Patent Examiner

Technology Center 2100

April 13, 2007